```
=> e e3+all
E1            0   BT3  Biopolymer formation factors (non-CA heading)/CT
E2         1173     BT2  RNA formation factors/CT
E3        67029       BT1  Transcription factors/CT
E4                      -->  Transcription factors (L) .sigma./CT
E5           17           OLD  Ribonucleic acid formation factor sigma/CT
E6                        OLD  Ribonucleic acid formation factors (L) .sigma./CT
E7          121           OLD  Ribonucleic acid formation factors sigma/CT
E8                        UF   .sigma. Factor (transcription factor)/CT
E9                        UF   .sigma. Ribonucleic acid formation factors/CT
E10                       UF   Factor .sigma. (transcription factor)/CT
E11                       UF   Factor sigma (ribonucleic acid formation
                               initiation)/CT
E12                       UF   RNA factors .sigma./CT
E13                       UF   Sigma factors/CT
E14                       UF   Transcription factor .sigma./CT
```

```
=> d full his

     (FILE 'HOME' ENTERED AT 18:11:49 ON 25 JAN 2003)

     FILE 'HCAPLUS' ENTERED AT 18:12:07 ON 25 JAN 2003

     FILE 'HCAPLUS' ENTERED AT 18:12:29 ON 25 JAN 2003
L1          1618 SEA ABB=ON  PLU=ON  SIGH OR SIGMA FACTOR H OR SIGMA FACTOR H
                 OR (TRANSCRIPTION FACTOR (L) SIGMA)
L2             5 SEA ABB=ON  PLU=ON  L1 (L) (CORYNEBACTERIA OR CORYNEBACTERIA
                 GLUTAMICUM OR (BACTERIA (L) CORYNEFORM))
L3             2 SEA ABB=ON  PLU=ON  L2 (L) (DNA OR CDNA OR NUCLEIC ACID OR
                 POLYNUCLEOTIDE)
                 D L2 IBIB AB 1-5
```

=> d l2 ibib ab 1-5

L2 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:182014 HCAPLUS
DOCUMENT NUMBER: 136:244347
TITLE: Novel Corynebacterium sigD genes used to improve the fermentative prodn. of L-amino acids
INVENTOR(S): Bathe, Brigitte; Kreutzer, Caroline; Martens, Monika; Farwick, Mike; Herrmann, Thomas; Pfefferle, Walter
PATENT ASSIGNEE(S): Degussa A.-G., Germany
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10043331	A1	20020314	DE 2000-10043331	20000902
EP 1205553	A1	20020515	EP 2001-117264	20010717
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002111468	A1	20020815	US 2001-941945	20010830

PRIORITY APPLN. INFO.: DE 2000-10043331 A 20000902
AB The invention concerns the isolation and sequencing of **coryneform bacteria** polynucleotide sequences, that can be used to improve the fermentative prodn. of L-amino acids. Gene sigD codes for an activator of **transcription factor .sigma.**D. The polynucleotide sequences are selected from the following groups: (a) polynucleotide, which is at least 70% identical to the polynucleotide sequence that encodes the Corynebacterium glutamicum sigD gene protein (SEQ.2); (b) polynucleotide sequence that encodes a protein that is at least 70% identical to the sigD protein (SEQ. 2); (c) polynucleotide, that is complementary to the polynucleotide sequence of (a) or (b); and (d) the polynucleotide sequence that contg. at least 15 adjacent nucleotides of the polynucleotide sequence of (a), (b) or (c).

L2 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:172101 HCAPLUS
DOCUMENT NUMBER: 136:215517
TITLE: Sequence of sigM gene from corynebacteria and use thereof in synthesis of L-lysine
INVENTOR(S): Bathe, Brigitte; Bastuck, Christine; Farwick, Mike; Hermann, Thomas; Pfefferle, Walter
PATENT ASSIGNEE(S): Degussa Ag, Germany
SOURCE: PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002018599	A1	20020307	WO 2001-EP9972	20010830
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10136984	A1	20020418	DE 2001-10136984	20010728
AU 2001089850	A5	20020313	AU 2001-89850	20010830
US 2002106755	A1	20020808	US 2001-942935	20010831

PRIORITY APPLN. INFO.: DE 2000-10043337 A 20000902

DE 2001-10136984 A 20010728
WO 2001-EP9972 W 20010830

AB The sigM gene of Corynebacterium glutamicum ATCC13032 encoding a sigma factor M is cloned for use in increasing the efficiency of fermn. of L-lysine by coryneform bacteria. The expression vector contg. sigM gene is constructed. Methods and culture media for fermentative prepn. of L-lysine with recombinant bacterial strains transformed with these vectors are also provided. Enhancement of the sigM gene expression by sigM shuttle vector increased the yield of lysine in a Corynebacterium host from 14.43 g lysine/L at 11.8 OD660 to 14.82 g lysine/L at 9.0 OD660. The fermentatively prepd. L-lysine are useful in pharmaceutical industry and foodstuff industry and very particularly in animal nutrition.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:172100 HCAPLUS
DOCUMENT NUMBER: 136:231337
TITLE: Sequence of **sigH** gene from **corynebacteria** and use thereof in synthesis of L-lysine
INVENTOR(S): Bathe, Brigitte; Schroeder, Indra; Rieping, Mechthild; Marx, Achim; Farwick, Mike; Pfefferle, Walter; Hermann, Thomas
PATENT ASSIGNEE(S): Degussa A.-G., Germany
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002018598	A1	20020307	WO 2001-EP9250	20010810
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10133427	A1	20020314	DE 2001-10133427	20010710
AU 2001082084	A5	20020313	AU 2001-82084	20010810
US 2002106756	A1	20020808	US 2001-942936	20010831

PRIORITY APPLN. INFO.: DE 2000-10043333 A 20000902
DE 2001-10133427 A 20010710
WO 2001-EP9250 W 20010810

AB The **sigH** gene of Corynebacterium glutamicum ATCC13032 encoding a **sigma factor H** is cloned for use in increasing the efficiency of fermn. of L-lysine by **coryneform bacteria**. The expression vector contg. **sigH** gene is constructed. Methods and culture media for fermentative prepn. of L-lysine with recombinant bacterial strains transformed with these vectors are also provided. Enhancement of the **sigH** gene expression by **sigH** shuttle vector increased the yield of lysine in a Corynebacterium host from 13.6 g lysine/L at 6.9 OD660 to 14.25 g lysine/L at 10.0 OD660. The fermentatively prepd. L-lysine are useful in pharmaceutical industry and foodstuff industry and very particularly in animal nutrition.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:172091 HCAPLUS
DOCUMENT NUMBER: 136:231335
TITLE: Sequence of sigC gene from corynebacteria and use

thereof in synthesis of L-lysine
INVENTOR(S): Bathe, Brigitte; Hans, Stephan; Farwick, Mike; Hermann, Thomas; Pfefferle, Walter
PATENT ASSIGNEE(S): Degussa Ag, Germany
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002018589	A2	20020307	WO 2001-EP9163	20010808
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10133426	A1	20020314	DE 2001-10133426	20010710
AU 2001093740	A5	20020313	AU 2001-93740	20010808
US 2002146782	A1	20021010	US 2001-941936	20010830

PRIORITY APPLN. INFO.: DE 2000-10043332 A 20000902
DE 2001-10133426 A 20010710
WO 2001-EP9163 W 20010808

AB The sigC gene of Corynebacterium glutamicum ATCC13032 encoding a sigma factor C is cloned for use in increasing the efficiency of fermn. of L-lysine by coryneform bacteria. The expression vector contg. sigC gene is constructed. Methods and culture media for fermentative prepn. of L-lysine with recombinant bacterial strains transformed with these vectors are also provided. Enhancement of the sigC gene expression by sigC shuttle vector increased the yield of lysine in a Corynebacterium host from 12.99 g lysine/L at 11.18 OD660 to 13.96 g lysine/L at 12.8 OD660. The fermentatively prepd. L-lysine are useful in pharmaceutical industry and foodstuff industry and very particularly in animal nutrition.

L2 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:171940 HCAPLUS
DOCUMENT NUMBER: 136:231331
TITLE: Sequence of sigE gene from corynebacteria and use thereof in synthesis of L-lysine
INVENTOR(S): Moeckel, Bettina; Hermann, Thomas; Farwick, Mike; Binder, Michael; Pfefferle, Walter
PATENT ASSIGNEE(S): Degussa Ag, Germany
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002018428	A2	20020307	WO 2001-EP8146	20010714
WO 2002018428	A3	20020606		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 10126422	A1	20020314	DE 2001-10126422	20010531

AU 2001085843	A5	20020313	AU 2001-85843	20010714
US 2002103356	A1	20020801	US 2001-935757	20010824

PRIORITY APPLN. INFO.:

DE 2000-10043336	A	20000902
DE 2001-10126422	A	20010531
US 2001-295009P	P	20010604
WO 2001-EP8146	W	20010714

AB The sigE gene of Corynebacterium glutamicum ATCC13032 encoding a sigma factor E is cloned for use in increasing the efficiency of fermn. of L-lysine by coryneform bacteria. The expression vector contg. sigE gene is constructed. Methods and culture media for fermentative prepn. of L-lysine with recombinant bacterial strains transformed with these vectors are also provided. Enhancement of the sigE gene expression by sigE shuttle vector increased the yield of lysine in a Corynebacterium host from 13.14 g lysine/L at 12.2 OD660 to 14.09 g lysine/L at 13.07 OD660. The fermentatively prepd. L-lysine are useful in pharmaceutical industry and foodstuff industry and very particularly in animal nutrition.